

Docket No.: 459992000700  
(PATENT)  
Client Ref.: N03-00

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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In re Letters Patent of:  
Benjamin D. PLESS

Patent No.: 6,944,501 B1

Issued: September 13, 2005

For: A NEUROSTIMULATOR INVOLVING  
STIMULATION STRATEGIES AND  
PROCESS FOR USING IT

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**REQUEST FOR CERTIFICATE OF CORRECTION  
PURSUANT TO 37 CFR 1.322**

Attention: Certificate of Correction Branch  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Upon reviewing the above-identified patent, Patentee noted an error requiring correction. Specifically, allowed claims 82-94 were never printed in the published patent. The mistake was incurred through the fault of the United States Patent and Trademark Office ("Office") as clearly noted in the attached documents (i.e., the Notice of Allowability and Examiner's Amendment, highlighted to reflect the allowance of claims 82-94, and a copy of the issued patent, U.S. Pat. No. 6,944,501 showing that claims 82-94 were never printed).

Patentee respectfully submits that the nature of the mistake on the part of the Office is such that a Certificate of Correction is inappropriate in form, and respectfully requests that the Director issue a corrected patent in lieu of the Certificate of Correction without expense to the Patentee in accordance with 37 CFR 1.322(b). However, should the Office conclude that a Certificate of Correction is a more appropriate form than a corrected patent, the Patentee submits herewith a

proposed Certificate of Correction, effecting the inclusion of allowable claims 82-94, as shown below.

In the Claims:

Please add claims 82-94, which were reinstated and deemed allowable in the Examiner's Amendment mailed February 24, 2005 and attached herewith for the Office's convenience. Claims 82-94 have been renumbered as claims 66-78 to retain continuity with the numbering in the issued patent, as shown below.

--Claim 66. A method for treating an abnormal neurological condition comprising the steps of:

applying to brain tissue at least one electrical burst comprising a multiplicity of pulses, said pulses having pulse parameters;

varying at least one of the pulse parameters during the at least one electrical burst;

applying the at least one electrical burst in response to a detectable electrical activity of the brain, wherein the detectable electrical activity in the brain is epileptiform activity and wherein the step of detecting the electrical activity in the brain is performed prior to initiating the application of the at least one electrical burst;

determining a pulse-to-pulse interval of said electrical activity in the brain prior to initiating said at least one electrical burst, wherein the at least one pulse parameter is pulse-to-pulse interval and further comprising the step of varying said pulse-to-pulse interval in length to between about 10% and about 400% of said epileptiform pulse-to-pulse interval.

Claim 67. A method for treating an abnormal neurological condition comprising the steps of:

applying to brain tissue at least one electrical burst comprising a multiplicity of pulses, said pulses having pulse parameters, the at least one electrical burst being applied in response to an epileptiform activity of the brain;

detecting the epileptiform activity in the brain prior to initiating said at least one electrical burst;

determining both an interval of the epileptiform activity in the brain prior to initiating said at least one electrical burst and a characteristic of the epileptiform activity;

delaying the initiation of said at least one electrical burst after the onset of the characteristic of the epileptiform activity for a period of time between 5% and about 100% of said interval of said epileptiform activity; and

varying at least one of the pulse parameters during the at least one electrical burst.

Claim 68. A method for treating an abnormal neurological condition comprising the steps of:

applying to brain tissue at least one electrical burst comprising a multiplicity of pulses, said pulses having pulse parameters, wherein the at least one electrical burst is applied in response to a detectable electrical activity of the brain, and wherein said detectable electrical activity is an epileptiform electrical activity;

detecting said electrical activity in the brain after the application of said at least one electrical burst;

analyzing said electrical activity for epileptiform activity to produce a re-analyzed electrical activity; and

varying at least one of the pulse parameters during the at least one electrical burst.

Claim 69. The method of claim 68 wherein said re-analyzed electrical activity comprises epileptiform electrical activity, said method comprising the further steps of:

re-applying to said brain tissue at least one electrical burst comprising a multiplicity of pulses, said pulses having pulse parameters; and

varying at least one of the pulse parameters during the re-applied at least one electrical burst.

Claim 70. The method of claim 69 wherein the at least one pulse parameters varied in said re-applied at least one electrical burst are different than the pulse parameters varied in an earlier at least one electrical burst.

Claim 71. The method of claim 70 wherein said steps are repeated up to ten times.

Claim 72. An implantable neurostimulator assembly for treating a disorder in a human brain, comprising in combination:

- a.) at least a first electrical neurostimulator electrode;
- b.) at least a first electrical signal source connectable to said at least first electrical neurostimulator electrode, said first electrical signal source configured to initiate a stimulation burst to said at least a first electrical neurostimulation electrode, said at least one burst comprising pulses having pulse parameters, and wherein the first electrical signal source is configured to vary the pulse parameters;
- c.) at least a first brain electrical activity sensor for sensing electrical activity in a brain, wherein said at least first brain electrical activity sensor is configured to determine an epileptiform pulse-to-pulse interval of said electrical activity in the brain prior to initiating the application of said at least one electrical burst; and

wherein said first electrical signal source is configured to deliver an applied pulse-to-pulse interval that is varied in length between about 105% and about 400% of said epileptiform pulse-to-pulse interval.

Claim 73. An implantable neurostimulator assembly for treating a disorder in a human brain, comprising in combination:

- a.) at least a first electrical neurostimulator electrode;
- b.) at least a first electrical signal source connectable to said at least first electrical neurostimulator electrode, said first electrical signal source configured to initiate at least one stimulation burst to said at least first electrical neurostimulation electrode, said at least one burst comprising pulses having pulse parameters, and wherein the first electrical signal source is configured to vary the pulse parameters;

c.) at least a first brain electrical activity sensor for sensing electrical activity in a brain, wherein said at least first brain electrical activity sensor is configured to determine an epileptiform pulse-to-pulse interval of said electrical activity in the brain prior to initiating the application of said at least one electrical burst; and

further wherein said first electrical signal source is configured to again apply at least one electrical burst comprising a multiplicity of pulses, said pulses having pulse parameters, at least one of which pulse parameters vary during the burst, when said at least first brain electrical activity sensor detects epileptiform electrical activity after application of the said first electrical burst.

Claim 74. An implantable neurostimulator assembly for treating a disorder in a human brain, comprising in combination:

a.) at least a first electrical neurostimulator electrode, and  
b.) at least a first electrical signal source connectable to said at least first electrical neurostimulator electrode, said first electrical signal source configured to initiate at least one stimulation burst to said at least a first electrical neurostimulation electrode, said at least one burst comprising pulses having pulse parameters, and wherein the first electrical signal source is configured to vary the pulse parameters;

c.) at least a first brain electrical activity sensor for sensing electrical activity in a brain, wherein said at least a first brain electrical activity sensor is configured to determine an epileptiform pulse-to-pulse interval of said electrical activity in the brain prior to initiating the application of at least one electrical burst when said at least first brain electrical activity sensor detects epileptiform electrical activity after application of said stimulation burst;

wherein said first electrical signal source is configured to again apply at least one electrical burst comprising a multiplicity of pulses, said pulses having pulse parameters, at least one of which pulse parameters vary during the burst, when said at least first brain electrical activity sensor detects epileptiform electrical activity after application of the said stimulation burst; and

further wherein said first electrical signal source is configured to vary at least one pulse parameter in said at least one re-applied electrical burst which parameter is different than the pulse parameter varied in said at least one stimulation burst.

Claim 75. The implantable neurostimulator of claim 72 wherein said first brain electrical activity sensor comprises multiple brain electrical activity sensors.

Claim 76. The implantable neurostimulator of claim 73 wherein said multiple brain electrical activity sensors comprise sensors for measuring said at least one brain electrical activity of said brain simultaneously at different sites in a brain.

Claim 77. The implantable neurostimulator of claim 73 wherein said sensors are configured to measure said brain activity at a depth within a brain.

Claim 78. The implantable neurostimulator of claim 73 wherein said sensors are configured to measure said brain activity on a scalp.--

As noted above, submitted herewith is a proposed Certificate of Correction. Patentee respectfully requests that the Office issue a corrected patent in lieu of the Certificate to effect the addition of claims 66-78 as noted above, or alternatively, grant the request for the Certificate of Correction. Irrespective of whether the Office issues a corrected patent or grants the Certificate of Correction, the mistake was on the part of the Office, and thus no fee is required.

Dated: January 15, 2008

Respectfully submitted,

By 

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**UNITED STATES PATENT AND TRADEMARK OFFICE  
CERTIFICATE OF CORRECTION**

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PATENT NO. : 6,944,501 B1  
APPLICATION NO. : 09/543,264  
ISSUE DATE : September 13, 2005  
INVENTOR(S) : Benjamin D. PLESS

It is certified that errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In the Claims:

Please add claims 82-94, which were reinstated and deemed allowable in the Examiner's Amendment mailed February 24, 2005 and attached herewith for the Office's convenience. Claims 82-94 have been renumbered as claims 66-78 to retain continuity with the numbering in the issued patent, as shown below.

--Claim 66. A method for treating an abnormal neurological condition comprising the steps of:  
applying to brain tissue at least one electrical burst comprising a multiplicity of pulses, said pulses having pulse parameters;  
varying at least one of the pulse parameters during the at least one electrical burst;  
applying the at least one electrical burst in response to a detectable electrical activity of the brain, wherein the detectable electrical activity in the brain is epileptiform activity and wherein the step of detecting the electrical activity in the brain is performed prior to initiating the application of the at least one electrical burst;  
determining a pulse-to-pulse interval of said electrical activity in the brain prior to initiating said at least one electrical burst, wherein the at least one pulse parameter is pulse-to-pulse interval and further comprising the step of varying said pulse-to-pulse interval in length to between about 10% and about 400% of said epileptiform pulse-to-pulse interval.

Claim 67. A method for treating an abnormal neurological condition comprising the steps of:  
applying to brain tissue at least one electrical burst comprising a multiplicity of pulses, said pulses having pulse parameters, the at least one electrical burst being applied in response to an epileptiform activity of the brain;  
detecting the epileptiform activity in the brain prior to initiating said at least one electrical burst;  
determining both an interval of the epileptiform activity in the brain prior to initiating said at least one electrical burst and a characteristic of the epileptiform activity;

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delaying the initiation of said at least one electrical burst after the onset of the characteristic of the epileptiform activity for a period of time between 5% and about 100% of said interval of said epileptiform activity; and  
varying at least one of the pulse parameters during the at least one electrical burst.

Claim 68. A method for treating an abnormal neurological condition comprising the steps of:  
applying to brain tissue at least one electrical burst comprising a multiplicity of pulses, said pulses having pulse parameters, wherein the at least one electrical burst is applied in response to a detectable electrical activity of the brain, and wherein said detectable electrical activity is an epileptiform electrical activity;  
detecting said electrical activity in the brain after the application of said at least one electrical burst;  
analyzing said electrical activity for epileptiform activity to produce a re-analyzed electrical activity; and  
varying at least one of the pulse parameters during the at least one electrical burst.

Claim 69. The method of claim 68 wherein said re-analyzed electrical activity comprises epileptiform electrical activity, said method comprising the further steps of:  
re-applying to said brain tissue at least one electrical burst comprising a multiplicity of pulses, said pulses having pulse parameters; and  
varying at least one of the pulse parameters during the re-applied at least one electrical burst.

Claim 70. The method of claim 69 wherein the at least one pulse parameters varied in said re-applied at least one electrical burst are different than the pulse parameters varied in an earlier at least one electrical burst.

Claim 71. The method of claim 70 wherein said steps are repeated up to ten times.

Claim 72. An implantable neurostimulator assembly for treating a disorder in a human brain, comprising in combination:  
a.) at least a first electrical neurostimulator electrode;  
b.) at least a first electrical signal source connectable to said at least first electrical neurostimulator electrode, said first electrical signal source configured to initiate a stimulation burst to said at least a first electrical neurostimulation electrode, said at least one burst comprising pulses having pulse parameters, and wherein the first electrical signal source is configured to vary the pulse parameters;  
c.) at least a first brain electrical activity sensor for sensing electrical activity in a brain, wherein said at least first brain electrical activity sensor is configured to determine an epileptiform pulse-to-pulse interval of said electrical activity in the brain prior to initiating the application of said at least one electrical burst; and  
wherein said first electrical signal source is configured to deliver an applied pulse-to-pulse interval that is varied in length between about 105% and about 400% of said epileptiform pulse-to-pulse interval.

Claim 73. An implantable neurostimulator assembly for treating a disorder in a human brain, comprising in combination:  
a.) at least a first electrical neurostimulator electrode;  
b.) at least a first electrical signal source connectable to said at least first electrical neurostimulator electrode, said first electrical signal source configured to initiate at least one stimulation burst to said at least first electrical neurostimulation electrode, said at least one burst

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comprising pulses having pulse parameters, and wherein the first electrical signal source is configured to vary the pulse parameters;

c.) at least a first brain electrical activity sensor for sensing electrical activity in a brain, wherein said at least first brain electrical activity sensor is configured to determine an epileptiform pulse-to-pulse interval of said electrical activity in the brain prior to initiating the application of said at least one electrical burst; and

further wherein said first electrical signal source is configured to again apply at least one electrical burst comprising a multiplicity of pulses, said pulses having pulse parameters, at least one of which pulse parameters vary during the burst, when said at least first brain electrical activity sensor detects epileptiform electrical activity after application of the said first electrical burst.

Claim 74. An implantable neurostimulator assembly for treating a disorder in a human brain, comprising in combination:

a.) at least a first electrical neurostimulator electrode, and

b.) at least a first electrical signal source connectable to said at least first electrical neurostimulator electrode, said first electrical signal source configured to initiate at least one stimulation burst to said at least a first electrical neurostimulation electrode, said at least one burst comprising pulses having pulse parameters, and wherein the first electrical signal source is configured to vary the pulse parameters;

c.) at least a first brain electrical activity sensor for sensing electrical activity in a brain, wherein said at least a first brain electrical activity sensor is configured to determine an epileptiform pulse-to-pulse interval of said electrical activity in the brain prior to initiating the application of at least one electrical burst when said at least first brain electrical activity sensor detects epileptiform electrical activity after application of said stimulation burst;

wherein said first electrical signal source is configured to again apply at least one electrical burst comprising a multiplicity of pulses, said pulses having pulse parameters, at least one of which pulse parameters vary during the burst, when said at least first brain electrical activity sensor detects epileptiform electrical activity after application of the said stimulation burst; and

further wherein said first electrical signal source is configured to vary at least one pulse parameter in said at least one re-applied electrical burst which parameter is different than the pulse parameter varied in said at least one stimulation burst.

Claim 75. The implantable neurostimulator of claim 72 wherein said first brain electrical activity sensor comprises multiple brain electrical activity sensors.

Claim 76. The implantable neurostimulator of claim 73 wherein said multiple brain electrical activity sensors comprise sensors for measuring said at least one brain electrical activity of said brain simultaneously at different sites in a brain.

Claim 77. The implantable neurostimulator of claim 73 wherein said sensors are configured to measure said brain activity at a depth within a brain.

Claim 78. The implantable neurostimulator of claim 73 wherein said sensors are configured to measure said brain activity on a scalp.—

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